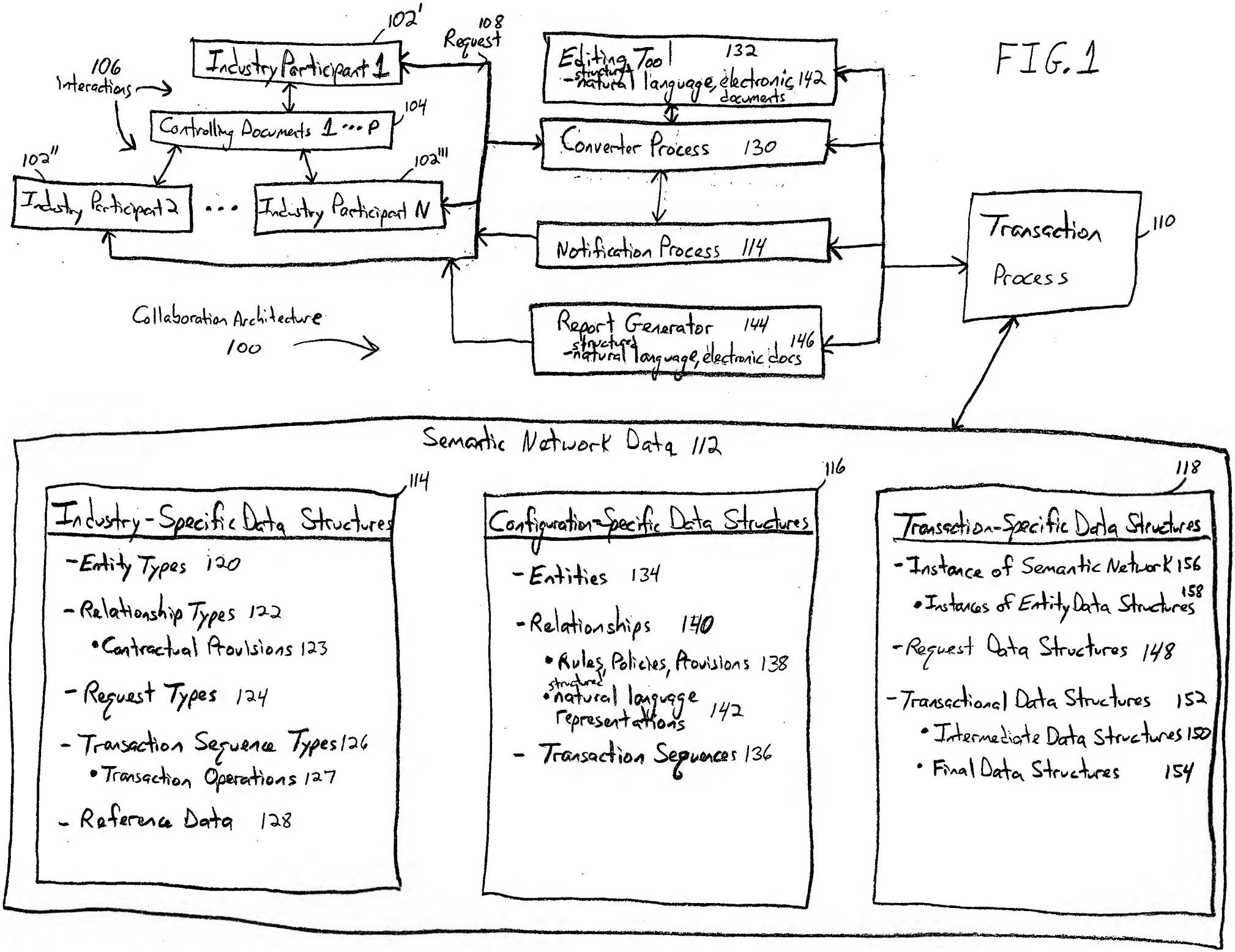


FIG. 1
Industry Participant 1
102'
108
Request
106
Interactions
Controlling Documents 1 ... P
104
102''
102'''
Industry Participant 2
Industry Participant N
Editing Tool 132
-structured/natural language, electronic documents 142
Converter Process 130
Notification Process 114
Transaction Process
110
Report Generator 144
-structured/natural language, electronic docs 146
Collaboration Architecture 100
Semantic Network Data 112
Industry-Specific Data Structures
114
- Entity Types 120
- Relationship Types 122
• Contractual Provisions 123
- Request Types 124
- Transaction Sequence Types 126
• Transaction Operations 127
- Reference Data 128
Configuration-Specific Data Structures
116
- Entities 134
- Relationships 140
• Rules, Policies, Provisions 138
• structured/natural language representations 142
- Transaction Sequences 136
Transaction-Specific Data Structures
118
- Instance of Semantic Network 156
• Instances of Entity Data Structures 158
- Request Data Structures 148
- Transactional Data Structures 152
• Intermediate Data Structures 150
• Final Data Structures 154

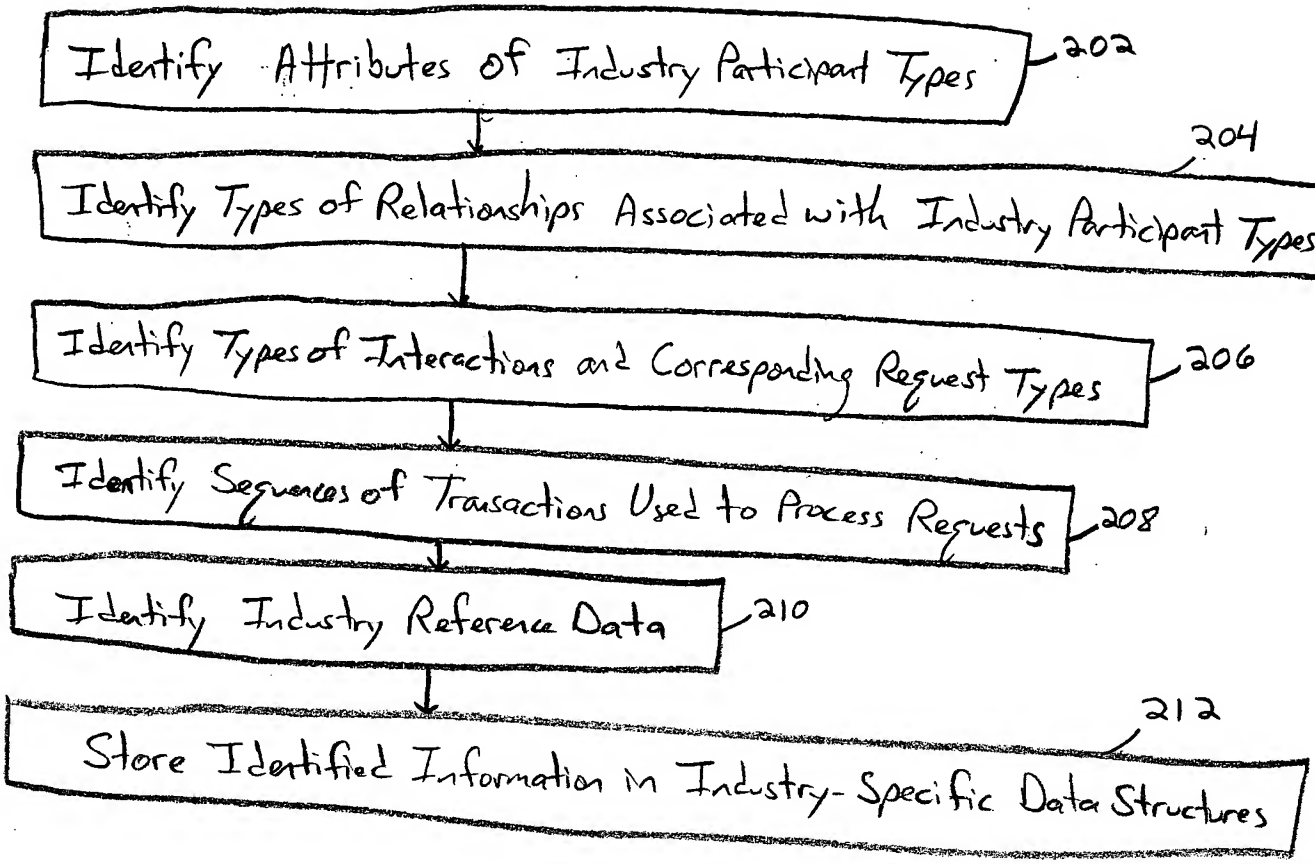

Identify Attributes of Industry Participant Types
202
Identify Types of Relationships Associated with Industry Participant Types
204
Identify Types of Interactions and Corresponding Request Types
206
Identify Sequences of Transactions Used to Process Requests
208
Identify Industry Reference Data
210
Store Identified Information in Industry-Specific Data Structures
212

FIG. 2

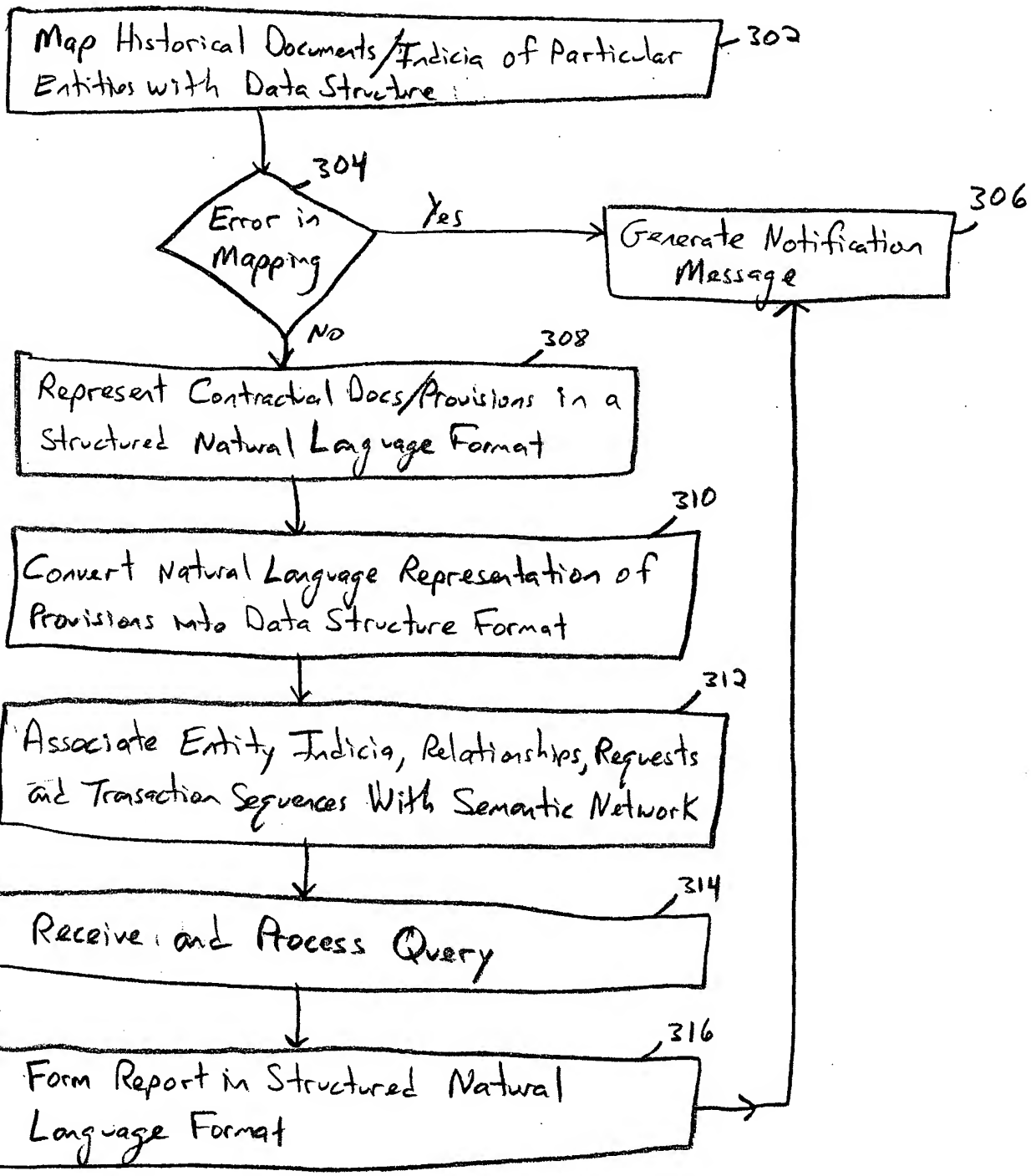

Map Historical Documents/Indicia of Particular Entities with Data Structure
302
304
Error in Mapping
Yes
306
Generate Notification Message
No
308
Represent Contractual Docs/Provisions in a Structured Natural Language Format
310
Convert Natural Language Representation of Provisions into Data Structure Format
312
Associate Entity Indicia, Relationships, Requests and Transaction Sequences With Semantic Network
314
Receive and Process Query
316
Form Report in Structured Natural Language Format

FIG. 3

FIG.4

Benefit limit *Natural Language Representation*

```
limits

    limit member  2 unit(s) : for service
      "90801", "90804", "90806"
    per 1  calendar year
benefits

    benefit for service "90801", "90804",
      "90806" 100 % of service
    cost co-payment of $ 5.00 per
      occurrence
```

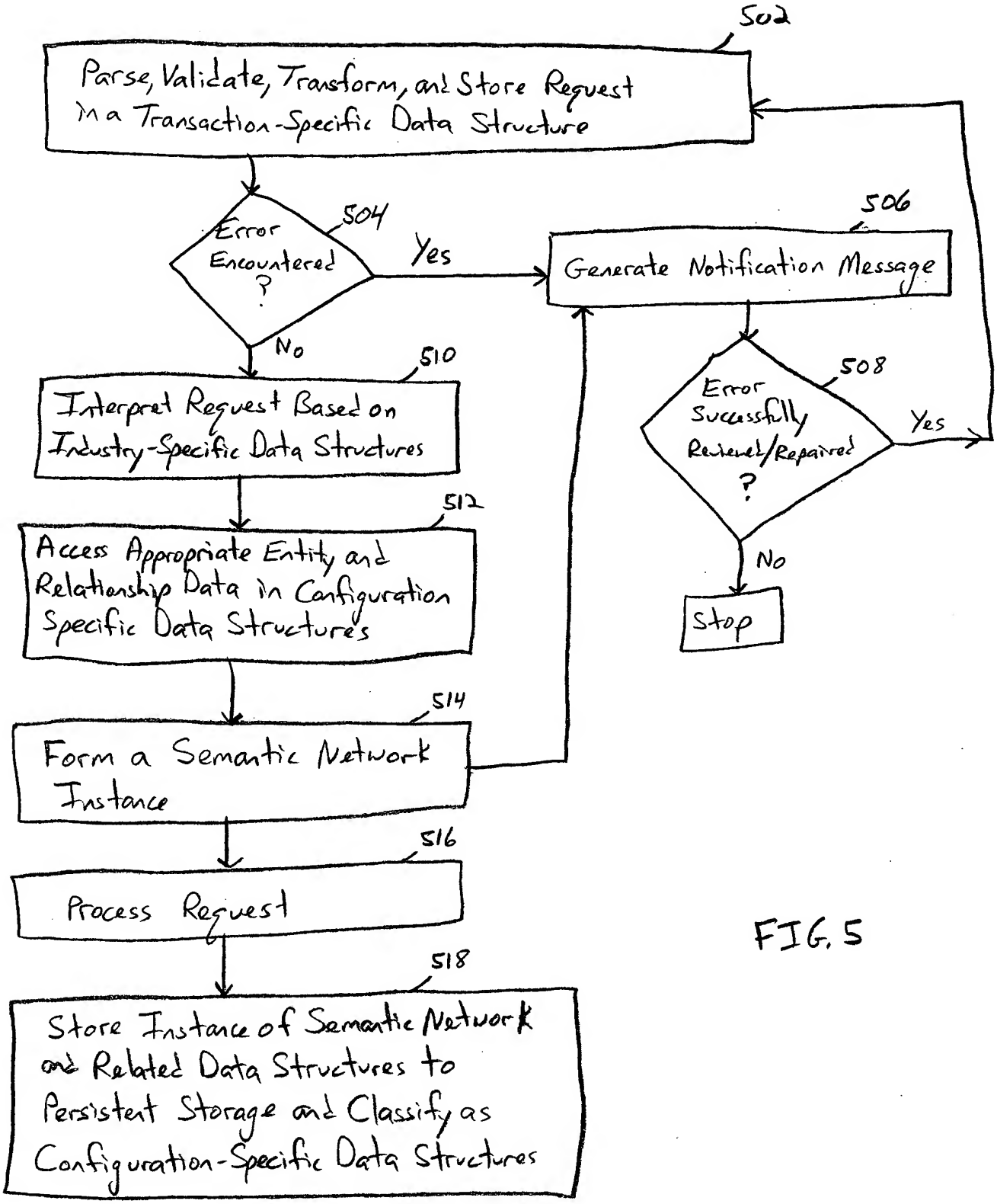

502
Parse, Validate, Transform, and Store Request in a Transaction-Specific Data Structure
504
Error Encountered ?
Yes
No
506
Generate Notification Message
508
Error Successfully Retrieved/Repaired ?
Yes
No
Stop
510
Interpret Request Based on Industry-Specific Data Structures
512
Access Appropriate Entity and Relationship Data in Configuration Specific Data Structures
514
Form a Semantic Network Instance
516
Process Request
518
Store Instance of Semantic Network and Related Data Structures to Persistent Storage and Classify as Configuration-Specific Data Structures

FIG. 5

FIG 6

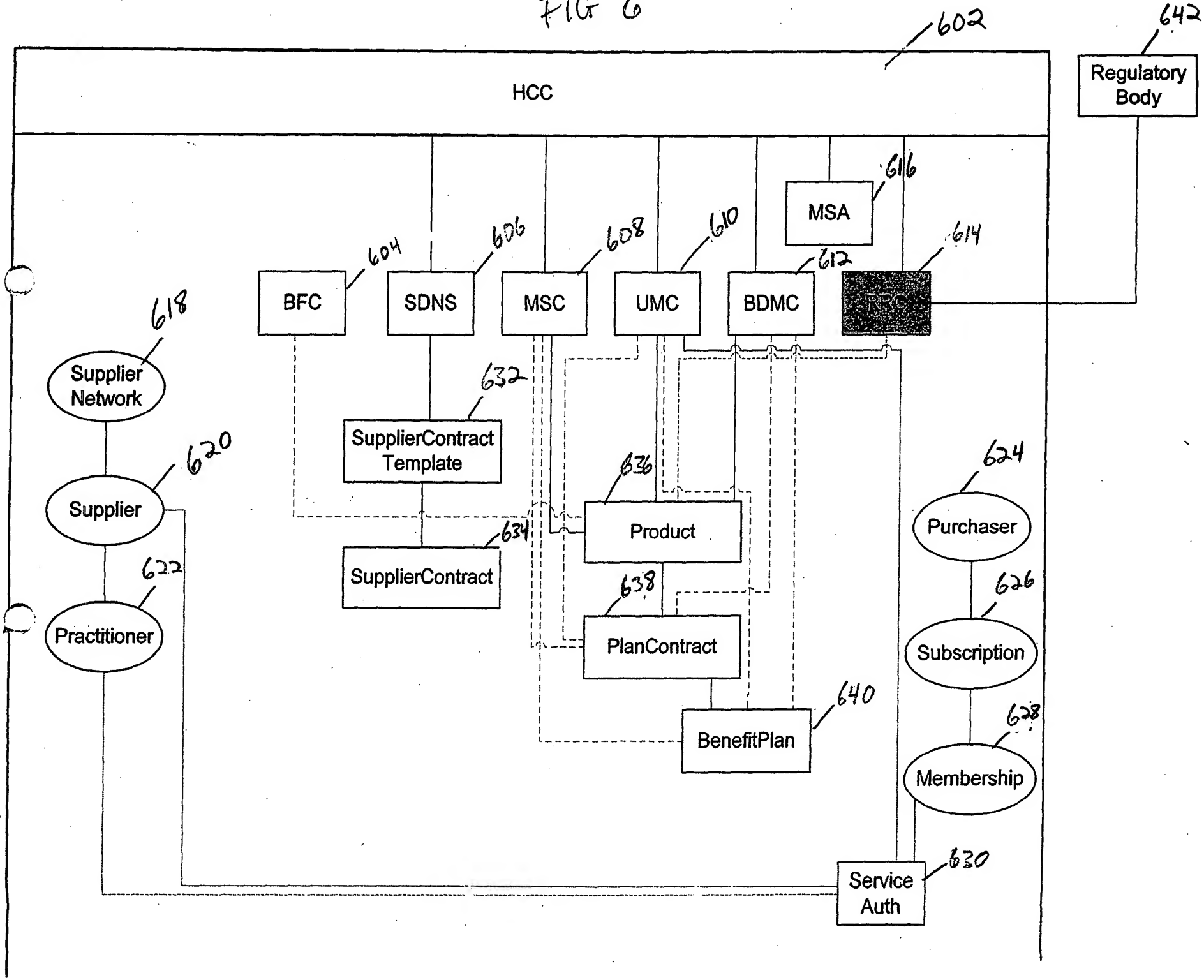
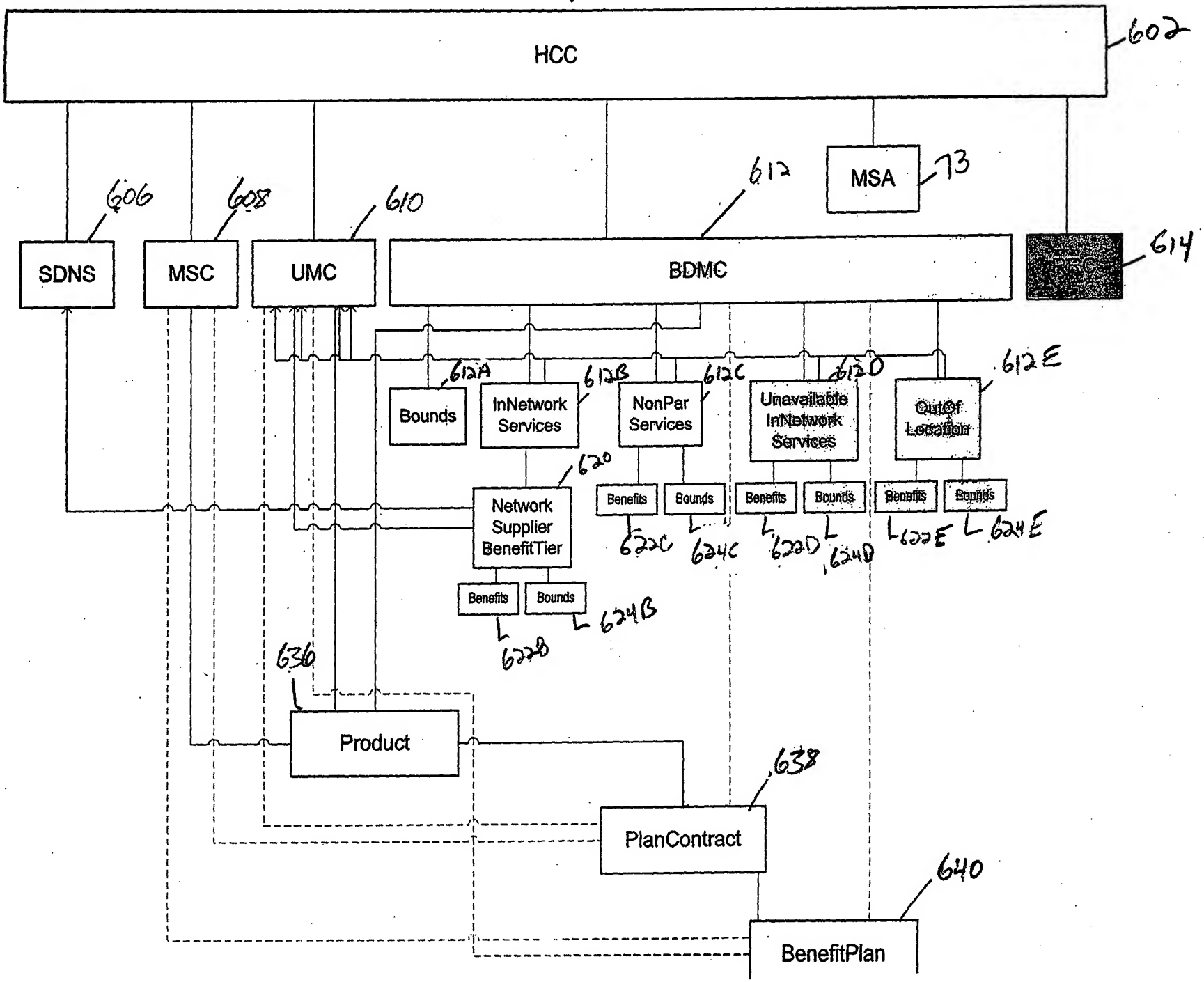

602
HCC
642
Regulatory Body
616
MSA
604
606
608
610
612
614
BFC
SDNS
MSC
UMC
BDMC
RRC
618
Supplier Network
632
SupplierContract Template
620
Supplier
636
Product
624
Purchaser
634
SupplierContract
622
638
626
Practitioner
PlanContract
Subscription
640
628
BenefitPlan
Membership
630
Service Auth

FIG. 7


HCC
602
SDNS
606
MSC
608
UMC
610
BDMC
612
MSA
73
614
612A
Bounds
612B
InNetwork Services
612C
NonPar Services
612D
Unavailable InNetwork Services
612E
Out Of Location
620
Network Supplier BenefitTier
Benefits
Bounds
622C
624C
622D
624D
622E
624E
622B
624B
636
Product
638
PlanContract
640
BenefitPlan